Purpose

DT is a subject where we learn to design, create, experiment, test, improve and evaluate.

Intent

At Frimley, teaching and learning in DT aims is to improve children's engagement, creativity and enjoyment of DT and to provide them with opportunities to develop and extend their skills. All children will have the opportunity to express their individual ideas, thoughts and interests through a variety of mediums, equipment and resources. Children will become more confident artists and creators understanding that there is no 'wrong' result/outcome and develop resilience to improving their outcomes. They will learn more about different techniques and skills and have opportunities to practice these to become more confident inventors and creators of their own works of art and projects. Where possible, activities will include child-choice and be child-led to develop creativity and independence further.

Implementation

- We use a mastery-based curriculum that is progressive and broken into modules.
- Teachers deploy the Rosenshine principles to support the teaching and learning process: reviews of previous learning, new information is presented in small steps, high-level questioning, carefully considered models, guided practice, checks for pupil understanding, obtainment of a high success rate, scaffolds for difficult tasks, opportunities for independent practice and reviews of learning over extended periods.
- Units of work incorporate the areas outlined in the National curriculum: design, make, evaluate and technical knowledge.
- Each year group participates in a cooking and nutrition unit, building on previously learnt skills and knowledge.
- The curriculum is designed to be progressive, ensuring children have the opportunity to revisit and build on skills.
- A combination of whole and part-projects are used to ensure full coverage of the National curriculum objectives.
- Lessons will be exciting and creative where children can explore their ideas through different mediums, equipment and resources in a supportive style of small-step learning to build confidence and more positive outcomes.
- Where meaningful, units link to other subjects and to a range of relevant real-life contexts to enable the development of further transferable skills and cross-curricular learning.
- Teachers will take photographs of the children's work if the selected medium cannot be performed in art books - this enables the subject leader to monitor skills and knowledge progression.
- Teachers will assess work against a unit-specific success criteria to monitor the curriculum areas children are meeting and areas for development.
- Lessons are taught in blocks by the class or PPA teachers.
- Children will be influenced through enrichment, after school clubs and assemblies to provide further opportunity for creativity and child-led approaches.
- Links to careers in DT are made to show how children's learning links to the wider world of work.

- As well as learning walks to observe teaching and learning and flipchart scrutinies, the Book Study approach is used to monitor the effectiveness of the DT curriculum, teaching and learning, to identify strengths and areas for development in provision and to garner pupil voice.

Impact

Children will:

- Leave Frimley equipped with a range of skills, knowledge and techniques to enable them to succeed in their secondary education.
- Show excitement, active engagement and enthusiasm in DT lessons.
- Explore and develop skills in using various techniques and a range of equipment.
- Have the ability to express their interests, ideas and thoughts with increasing confidence.
- Broaden and deepen their understanding of approaches in DT and enjoy the varied creative opportunities.
- Possess a clear understanding of the different stages of a DT project and some of the tasks and procedures needed to be successful at each stage.
- Have evidence of the skills they have learnt and of their progress in their sketch books (where relevant) and photos (where appropriate).
- Become better creative risk takers.
- Show resilience when things go wrong and develop a growth mindset to DT.
- Become more experimental and understand how to better their outcomes.
- Deploy a confident approach to creative learning.
- Be well equipped to plan and carry out creative learning and have developed their skills to achieve better outcomes.
- Be able to assess their own outcomes constructively and, with support, be able to identify areas for improvement and development.
- Understand how their learning in DT links to the wider world of work.
- Meet the end of key stage 2 expectations outlined in the National curriculum for DT.

	Autumn	Spring	Summer
Year 3	**Bridges/Landmarks/Boats (full project)** Children will complete a full project designing and making either a bridge, landmark or boat (this is on a rotation). Children will design their project, beginning to research design ideas, develop simple design criteria, share ideas through discussion and begin to use sketches and diagrams. To make their project, they will begin to select tools and equipment for the task, measure, mark out, cut and shape, assemble, join and combine materials. They will then evaluate their work, identifying what they like and dislike about their products, what is the same/different from their original design and considering the views of others. Children will begin to apply their understanding of how to strengthen, stiffen and reinforce simple structures.	**Pneumatic Systems (part project)** In this part project, children will begin to understand how simple pneumatic systems create movement. They will make a pneumatic toy beginning to select tools and equipment for the task, measuring, marking out, cutting and shaping, assembling, joining and combining materials, with some accuracy. They will then evaluate their part project identifying what they like and dislike about their product and considering the views of others. They will begin to apply their understanding of how to strengthen, stiffen and reinforce simple structures.	**Gears (part project)** Children will complete a part project beginning to understand how simple gears create movement. When making, they will begin to select tools and equipment for the task. They will measure, mark out, cut and shape, assemble, join and combine materials, with some accuracy and apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
	Cooking and Nutrition – Big Soup In year 3, children will prepare and cook soup and bread, which they can then try at a soup tasting event. As part of the preparation, they will identify foods that are healthy and unhealthy and begin to identify where food comes from. They will prepare and cook using simple cooking techniques modelled by a teacher.		
Year 4	**Bridges/Landmarks/Boats (full project)** Children will complete a full project designing and making either a bridge, landmark or boat (this is on a rotation). They will design their project carrying out research and gathering information. They will develop a design criteria to inform their ideas. They will use prototypes and pattern pieces if needed and use annotated sketches. To make their project, they will select from a range of tools and equipment, measure, mark out, cut and shape, assemble, join and combine materials accurately. They will begin to apply modelled finishing techniques. Children will evaluate their work identifying strengths and weaknesses of their product, identifying whether they achieved their design criteria. They will consider the views of others and develop their understanding of how to strengthen, stiffen and reinforce more complex structures.	**Light up boxes using electrical circuits (part project)** Children will complete a part project making a light up box using electrical circuits. They will design by developing their own design criteria and use these to inform their ideas. They will begin to use annotated sketches. When making, they will select from a range of tools and equipment suitable for the task. They will measure, mark out, cut and shape, assemble, join and combine materials accurately and begin to apply modelled finishing techniques.	
	Cooking and Nutrition – Big Soup In year 4, children will prepare and cook soup and bread, which they can then try at a soup tasting event. In preparation for this, they will identify foods that are healthy and unhealthy and begin to understand and name food	**Levers and Linkages (part project)** In this part project, children will carry out research and gather information they need. They will develop a design criteria to inform a design idea. They will discuss their ideas and begin to use annotated sketches. To make their design, they will	

	groups. They will prepare and cook using simple cooking techniques with increasing independence and they will identify where and how a variety of ingredients are grown, reared, caught and processed.	select suitable tools and equipment. Children will measure, mark out, cut, shape, assemble, join and combine materials accurately and begin to apply modelled finishing techniques.	
Year 5	**Cams (part project)** In this project, children will design a cam toy idea, understanding how cams create movement. They will identify the needs, wants and preferences of particular individuals and groups, developing a design specification to inform the design and generate innovative ideas. They will make design decisions, taking account of constraints such as time and use annotated sketches. When making, children will produce lists of tools, equipment and materials they need. They will measure, mark out, cut and shape to the nearest cm and assemble, join and combine materials following a method. Children will apply a range of finishing techniques. The children will evaluate their work, investigating and analysing existing products and develop their understanding of how to strengthen, stiffen and reinforce more complex structures.	**Moon buggy project with pulley and electrical component (full project)** For this full project, children will design, make and evaluate a moon buggy project with pulley and electrical component. They will begin to understand how pulleys and gears create movement and begin to understand and use electrical circuits incorporating switches and motors within products. They will carry out research, using surveys and interviews, identify the needs, wants and preferences of particular individuals and groups and develop a design specification to inform the design of innovative, functional and appealing products. In their design, they will make design decisions, taking account of constraints such as time. They will use annotated sketches, drawings and diagrams. When making, children will produce lists of tools, equipment and materials they need, giving reasons for choices, measure, mark out, cut and shape to the nearest cm, assemble, join and combine materials following a method and apply a range of finishing techniques. They will develop their understanding of how to strengthen, stiffen and reinforce more complex structures. Children will then evaluate the quality of their product in detail and refer to their own design criteria when evaluating, suggesting ways to improve. They will also consider the views of others.	
	Cooking and Nutrition – Big Soup In year 5, children will prepare and cook soup and bread, which they can then try at a soup tasting event. In preparation for this, they will identify food groups and how these help us maintain a healthy diet. They will develop their understanding of seasonality identifying when a variety of ingredients are grown. They will prepare and cook using more complex cooking techniques following a recipe and measure accurately using the metric scale.		
Year 6	**Bridges/Landmarks/Boats (full project)** Children will complete a full project designing and making either a bridge, landmark or boat (this is on a rotation). To design, children will carry out research, identify the needs, wants, preferences of individuals and groups, develop a detailed design specification, which can be justified with reasons, and recognise when their products have to fulfil conflicting requirements. They will generate innovative ideas, drawing on research, make design decisions, taking account of constraints such as time, resources and cost and use annotated sketches. When making, they will explain their choice of materials/components according to their functional and aesthetic qualities, measure, mark out, cut and shape to the nearest mm, assemble, join and combine materials in a sensible order and apply a range of finishing techniques. To		**Digestion teaching model (part project)** Children will design and make a teaching tool to teach others about digestion. In the design, they will carry out research, developing a detailed design specification which can be justified with reasons. They will recognise when their products have to fulfil conflicting requirements, and generate innovative ideas, drawing on research. In year 6, children make design decisions, taking account of constraints such as time, resources and cost. They will use annotated sketches, drawings and diagrams and prototypes. When making, they will explain their choice of materials/components according to their functional and aesthetic qualities, measure, mark out, cut and shape to the nearest mm and assemble, join and combine materials in a sensible order. Children will apply a range of finishing techniques.

	evaluate, they will investigate and analyse existing products and evaluate the quality, manufacture and fitness for purpose of their product in detail, referring to their own design criteria, suggesting ways to improve. They will consider the views of others to improve their work. They will more confidently apply their understanding of how to strengthen, stiffen and reinforce complex structures.		**Computing – program, monitor and control (part project)** In this part project, children will design and make a product using computer aided design. They will generate and develop their own ideas before using Tinkercad, where they will apply their coding knowledge, to create and modify a functioning 3D digital design that moves.
	Cooking and Nutrition – Big Soup In year 6, children will prepare and cook soup and bread, which they can then try at a soup tasting event. They will adapt and create recipes applying the principles of a healthy diet and prepare and cook using more complex cooking techniques, following recipes independently. Children will measure accurately using the metric (and imperial) scale.		**Product with electrical circuits (part project)** In this part project, children will understand and use more complex circuits with switches, bulbs buzzers and motors in products. They will design a product (robot) carrying out research and identify the needs, wants and preferences of particular individuals and groups. Children will develop a detailed design specification which can be justified with reasons and recognise when their products have to fulfil conflicting requirements. They will generate innovative ideas, drawing on research and make design decisions, taking account of constraints such as time, resources and cost. Children will use annotated sketches, drawings and diagrams. When making, children will explain their choice of materials/components according to their functional and aesthetic qualities, measure, mark out, cut and shape to the nearest mm and assemble, join and combine materials in a sensible order. They will apply a range of finishing techniques.